

## REMARKS

In the Office Action the Examiner noted that claims 1-8 and 10-20 are pending in the application. The Examiner allowed claims 18 and 19, objected to claims 6 and 15 and rejected the remaining claims. By this Amendment, various claims have been amended. Thus, claims 1-8 and 10-20 are pending in the application. The Examiner's rejections are traversed below.

### The July 21, 2004 Interview

Appreciation is expressed to the Examiner for the telephone interview which was granted on July 21, 2004. At the interview, it was urged that the prior art did not teach or suggest the feature of the claimed water repellent membrane providing surface filtration of dirt particles and water. At the interview, the applicants proposed the above-identified amendment to claim 1 to further clarify these features. After a discussion, the Examiner agreed that such an amended claim 1 would probably overcome the currently cited prior art. However, the Examiner indicated that he would have to review all of the prior art which had previously been cited in this case, including the prior art submitted by information disclosure statements, to determine whether any of this prior art includes filter arrangements which are more pertinent than the Kobayashi reference. By this Amendment, claim 1 has been amended in the manner discussed at the interview and the other rejected independent claims (claims 10 and 20) have also been amended in a similar manner. Additional points raised at the interview are discussed below.

### Rejection Under 35 U.S.C. § 103

In item 2 on pages 2-4 of the office Action, the Examiner has rejected claims 1-5, 7-8, 10-14 and 16-18 under 35 U.S.C. §103 as unpatentable over U.S. Patent 5,886,296 to Ghorbani et al. in view of U.S. Patent 5,395,411 to Kobayash, the German '541 reference and the U.S. Patent 5,121,291 to Cope et al.

The rejection set forth in item 2 on page 2 of the Office Action does not specifically identify the claim language to which each of the references is being applied. However, the Examiner states that the German '541 reference is being cited for its disclosure of an air guide. Therefore, it is believed that this portion of the rejection is being applied to, for example, claims 2 and 3. Further, the Examiner states that Cope et al. discloses controlling the fan speed. Therefore, it is believed that this reference is being applied to certain dependent claims, for example dependent claim 5.

In view of the above, it is believed that the independent claims are being rejected based on the combination of Ghorbani et al. and Kobayashi. The Examiner confirmed this point during the interview.

#### The Ghorbani et al Reference

Ghorbani et al. is directed to an outside telecommunications equipment enclosure having a hydrophobic vent. Figure 3 which is an exploded view of a hydrophobic vent, is described from column 2, line 50 to column 4, line 47. As described therein, the filtering of dust particles and liquids is done in two stages. In the first stage, dust particles are filtered by a screen 34 which is positioned on an exterior side of the enclosure. The screen is a wire mesh made of plastic, aluminum or stainless steel. In the second stage, a filter sheet 38 including hydrophobic material 40 prevents liquids from passing through. The filter sheet 38 maintains the position of the circular hydrophobic material 40 in the correct position with respect to circular openings 30 in the enclosure. It is clear that the dust particle screen 34 is outside of the enclosure. Further, the filter sheet 38 has no filtering functionality other than by virtue of the hydrophobic material 40 which only filters liquids. See column 3, lines 31-32 which state that this material is used "to prohibit liquids from passing therethrough."

#### The Kobayashi Reference

The Kobayashi patent is directed to a filter for air cleaning which includes a layer of water repellent fiber and a layer in which fiber bundles comprise aggregates of water-absorbent fibers.

The filter is used for cleaning outside air to be taken into factories, buildings, etc. particularly to remove salt particles contained in the outside air in coastal areas. The filter disclosed in Kobayashi consists of a first water-repellent layer (A) (column 3, lines 21-23) which is described to be made of, for example, a porous membrane of Teflon (column 3, lines 32-33), and a water-absorbent layer (B) (column 3, lines 58-61) located upstream (of layer A) (column 4, lines 48-51).

Kobayashi describes that the two layers provide different particle collection efficiencies, wherein the efficiency of layer (B) is lower than that of layer (A) (column 3, line 46 to column 4, line 3).

The arrangement of Kobayashi is an aggregation of two separate filters with different characteristics, to provide a filtering process in two stages. Salt particles small enough to pass through layer (B) with its lower particle collection efficiency, might be stopped by layer (A), but would consequently get stuck in the fiber bundles or voids of layer (B), causing the clogging of

layer (A) after a certain time. The same effects would occur if yet another layer for removing dust particles is arranged upstream of layer (B) or in between layers (B) and (A) (column 4, lines 57-60).

The Present Claimed Invention Patentably Distinguishes Over the Prior Art

In contrast to Kobayashi, in the present claimed invention, the water-repellent membrane filter does not consist of multiple layers with different filter characteristics for different forms of filtering (i.e., water, salt, dust...) but instead provides a surface filtration of water and dust at the same filter layer. The characteristics of the dust filtering of Kobayashi are not disclosed in detail, but it appears that it is a well known mesh filter rather than a surface filter. In particular, column 4, lines 62-65 of Kobayashi state "airborne dust adheres to a filter".

It is submitted that when prior art filters are characterized as being water repellent (e.g., Kobayashi) this means that the material used for the filter does not absorb water (i.e., the filter becomes wet). This does not mean that such a filter prevents water from passing through the filter. For example, Kobayashi at column 4, lines 53-55 states that "salt water is passed through the water repellent layer". This water repellent layer feature is used to prevent wet dust particles from sticking to the filter. In contrast to such prior art water repellent filters, the claimed water repellent filter is made up of a water repellent membrane which provides surface filtration of both dirt particles and water, a feature which is not performed by the prior art.

Even if it could be urged that the filter disclosed in Kobayashi, with its multiple filter layers for different purposes, might replace the two stage filtering (34 and 38) or Ghorbani et al., this combination still does not teach the claimed surface filtering of water and dust. The only difference between Kobayashi and Ghorbani et al. is that Kobayashi discloses an aggregation of the two filtering stages (34 and 38) over Ghorbani into one single filter with a number of layers. It is also noted that Kobayashi states that the water repellent layer (A) could be realized by a porous membrane of Teflon (i.e., PTFE) (see, column 3, lines 46-53). It is noted that PTFE has a limited particle collection efficiency. Therefore, the stopping of dirt depends on the characteristics (size of pores, required air permeability) of the material used for the layer.

As discussed above, there is no disclosure that Kobayashi provides a filter which is capable of surface filtration of dirt particles as is done by the present claimed invention. Therefore, it submitted that one of ordinary skill in the art would not have been lead to replace the dust particle screen 34 of Ghorbani and the filter sheet 38 including hydrophobic material 40

Serial No. 09/581,712

in Ghorbani with the Kobayashi filter, since there is no teaching that Kobayashi provides surface filtration of both dirt particles and water from the air.

Referring to claim 1, it is submitted that the prior art does not teach or suggest the claimed cooling arrangement which comprises:

at least one water-repellent membrane filter having a surface arranged in an air inlet of the housing for surface filtration of dirt particles and water filter from cooling air flowing into the housing for cooling the electrical subassemblies , said surface filtration of dirt particles and water occurring at the surface of said at least one water repellent membrane filter;

Therefore, it is submitted that claim 1 patentably distinguishes over the prior art.

Referring to claim 10, it is submitted that the prior art does not teach or suggest the claimed base station which includes:

at least one water-repellent membrane filter having a surface arranged in said at least one air inlet of the housing for the surface filtration of dirt particles and water from the cooling air flowing in said at least one air inlet, said surface filtration of dirt particles and water occurring at the surface of said at least one water repellent membrane filter;

Therefore, it is submitted that claim 10 patentably distinguishes over the prior art.

Referring to claim 20, it is submitted that the prior art does not teach or suggest the claimed cooling arrangement which includes:

at least one water-repellant membrane filter having a surface arranged in an air inlet of the single housing for surface filtration of dirt particles and water from cooling air flowing into the single housing for cooling the electrical subassemblies, said surface filtration of dirt particles and water occurring at the surface of said at least one water repellent membrane filter;

Therefore, it is submitted that claim 20 patentably distinguishes over the prior art.

Claims 2-8 and 11-17 depend, directly or indirectly from claim 1 or claim 10 and include all of the features of the claim from which they depend plus additional features which are not taught or suggested by the prior art. For example, the Examiner has indicated that claim 6 and

Serial No. 09/581,712

15 include patentable features. Therefore, it is submitted that claims 2-7 and 11-17 patentably distinguish over the prior art.

Summary

It is submitted that none of the references, either taken alone or in combination, teach the present claimed invention. Thus, claims 1-8, and 10-20 are deemed to be in a condition suitable for allowance. Reconsideration of the claims and an early notice of allowance are earnestly solicited.

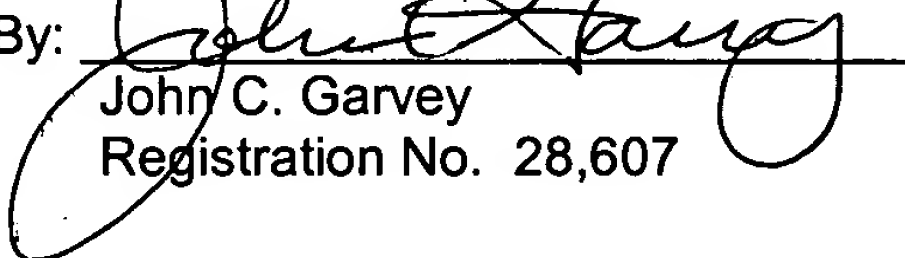
Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: 7-28-04

By:   
John C. Garvey  
Registration No. 28,607

1201 New York Avenue, N.W.  
Suite 700  
Washington, D.C. 20005  
(202) 434-1500